Recommendations

- Polarimeter
  - Investigate conducting laboratory polarimetric cross-calibration
  - Identify PODEX targets for joint L1 and L2 comparisons among AirMSPI, PACS, RSP
  - Consider unifying instrument uncertainty models and appropriate accounting for sources of uncertainty
  - Pursue post-PODEX field mission data comparisons
  - Distribute L2 as well as L1 results
- Lidar
  - Expand aerosol typing analysis to include 355 nm products
  - Continue assessment and improvement of lidar-only microphysical retrievals
  - Translate operational aircraft retrievals to architecture suitable for space
- Examine combined active (lidar)+ passive (polarimeter) retrieval algorithms to determine information content of various combinations of wavelengths, angles, coincidence criteria, etc.

Recommendations

- Revisit uncertainty estimates for complex index (and single scattering albedo) and size as a function of aerosol optical depth and aerosol type for different fine mode fractions.
- Evaluate ACE fine mode effective variance uncertainties given the scientific questions associated with being able to detect and characterize CCN. Examine role of HSRL 355 nm measurements in this role.
- For radiative forcing
  - Analyses focused on impact of measurements and measurement requirements for aerosol forcing
  - Address aerosol absorption as well as AOD
- Development/deployment of instrument(s) that can provide range resolved (e.g. via aircraft) measurement of ambient AAOD and SSA of sufficient accuracy (+/-0.01-0.02) to validate remote sensing absorption retrievals

Recommendations

- Pursue OSSEs that are well constrained by observations to test future multi-platform capabilities for meeting science questions/objectives
- Revise ACE/PACE Science Question/Objective Chart
  - Reflect incremental vs. major advances
  - Indicate where ACE makes major advances
- Summarize status and recommend future plans regarding aerosol-clouds for decadal study
  - Determine relevant science questions and measurement requirements
  - Address multi-platform, multi-satellite opportunities